

CLAIMS

- Sub Aa
1. An isolated, purified, or recombinant polynucleotide comprising a contiguous span of at least 60 nucleotides of SEQ ID No. 1 or the complements thereof.
- 5 2. An isolated, purified, or recombinant polynucleotide comprising a contiguous span of at least 60 nucleotides of SEQ ID No. 2 or the complements thereof.
3. An isolated, purified, or recombinant polynucleotide comprising a contiguous span of at least 60 nucleotides of SEQ ID No. 3 or the complements thereof.
- 10 4. An isolated, purified, or recombinant polynucleotide comprising a contiguous span of at least 60 nucleotides of SEQ ID No. 4. or the complements thereof.
5. An isolated, purified, or recombinant polynucleotide consisting essentially of a contiguous span of 8 to 50 nucleotides of anyone of SEQ ID Nos. 1 and 2 or the complement thereof, wherein said span includes a *TBC-1*-related biallelic marker in said sequence.
- Sub A3
- 15 6. A polynucleotide according to claim 5, wherein said *TBC-1*-related biallelic marker is selected from the group consisting of the biallelic markers in positions 9494 of the SEQ ID No. 1, and 1443, 5247, 6223, 14723, 19186, 18997, 19891, 29617, 42519, 69324, 69181, 69146, 76458, 78595, 82159, 84522, 84810, and 89967 of the SEQ ID No. 2.
7. A polynucleotide according to any one of claims 5 or 6, wherein said contiguous span is 18 to 35 nucleotides in length and said biallelic marker is within 4 nucleotides of the center of said polynucleotide.
- 20 8. A polynucleotide according to claim 7, wherein said polynucleotide consists of said contiguous span and said contiguous span is 25 nucleotides in length and said biallelic marker is at the center of said polynucleotide.
9. A polynucleotide according to claim 8, wherein said polynucleotide consists essentially of a sequence selected from the sequences with the position range 9482-9506 in SEQ ID No. 1 and with the following position ranges in SEQ ID No. 2 : 1431-1455, 5235-5259, 6211-6235, 14711-14735, 19174-19198, 18985-19009, 29605-29629, 42507-42531, 69312-69336, 69169-69193, 69134-69158, 78583-78607, 82147-82171, 84510-84534, 84798-84822, and 89955-89979, and the complementary sequences thereto.
- 25 10. A polynucleotide according to any one of claims 1 to 6, wherein the 3' end of said contiguous span is present at the 3' end of said polynucleotide.
- 30 11. A polynucleotide according to any one of claims 5 or 6, wherein the 3' end of said contiguous span is located at the 3' end of said polynucleotide and said biallelic marker is present at the 3' end of said polynucleotide.
- Sub A4
- 35 12. An isolated, purified, or recombinant polynucleotide consisting essentially of a contiguous span of 8 to 50 nucleotides of anyone of SEQ ID Nos. 1 and 2 or the complement thereof, wherein the 3' end of said contiguous span is located at the 3' end of said polynucleotide,

and wherein the 3' end of said polynucleotide is located within 20 nucleotides upstream of a *TBC-1*-related biallelic marker in said sequence.

13. A polynucleotide according to claim 12, wherein the 3' end of said polynucleotide is located 1 nucleotide upstream of said *TBC-1*-related biallelic marker in said sequence.

5 14. A polynucleotide according to claim 13, wherein said polynucleotide consists essentially of a sequence selected from the sequences with the position range 9475-9493 in SEQ ID No. 1 and with the following position ranges in SEQ ID No 2 : 1424-1442, 5228-5246, 6204-6222, 14704-14722, 19167-19185, 18978-18996, 19872-19890, 29598-29616, 42500-42518, 69305-69323, 69162-69180, 69127-69145, 76439-76457, 78576-78594, 82140-82158, 84503-84521, 10 84791-84809, and 89948-89966, and the complementary position range 9495-9513 in SEQ ID No. 1 and the following complementary position ranges in SEQ ID No 2 : 1444-1462, 5248-5266, 6224-6242, 14724-14742, 19187-19205, 18998-19016, 19892-19910, 29618-29636, 42520-42538, 69325-69343, 69182-69200, 69147-69165, 76459-76477, 78596-78614, 82160-82178, 84523-84541, 84811-84829, and 89968-89986.

15 15. An isolated, purified, or recombinant polynucleotide consisting essentially of a sequence selected from the sequences with the position range 9391-9408 in SEQ ID No 1 and with the following position ranges in SEQ ID No 2 : 988-1006, 5039-5056, 5997-6015, 14371-14390, 18751-18771, 19605-19625, 29529-29547, 42268-42287, 69026-69046, 76323-76343, 78292-78309, 81893-81912, 84392-84412, and 89746-89765, and the complementary position range 20 9828-9845 in SEQ ID No 1 and the following complementary position ranges in SEQ ID No 2 : 1509-1529, 5534-5554, 6332-6350, 14798-14817, 19198-19217, 19986-20005, 30041-30061, 42732-42752, 69525-69543, 76771-76790, 78704-78721, 82353-82372, 84909-84929, and 90179-90198.

16. An isolated, purified, or recombinant polynucleotide which encodes a polypeptide comprising a contiguous span of at least 6 amino acids of SEQ ID No 5.

17. A polynucleotide according to any one of claims 1 to 16 attached to a solid support.

18. An array of polynucleotides comprising at least one polynucleotide according to claim 17.

19. An array according to claim 18, wherein said array is addressable.

30 20. A polynucleotide according to any one of claims 1 to 16 further comprising a label.

21. A recombinant vector comprising a polynucleotide according to any one of claims 1 to 4 and 16.

22. A host cell comprising a recombinant vector according to claim 21.

23. A non-human host animal or mammal comprising a recombinant vector according to claim 22.

24. A method of genotyping comprising determining the identity of a nucleotide at a *TBC-1*-related biallelic marker or the complement thereof in a biological sample.

25. A method according to claim 24, wherein said biological sample is derived from a single subject.

26. A method according to claim 25, wherein the identity of the nucleotides at said biallelic marker is determined for both copies of said biallelic marker present in said individual's genome.

27. A method according to claim 24, wherein said biological sample is derived from multiple subjects.

28. A method according to claim 24, further comprising amplifying a portion of said sequence comprising the biallelic marker prior to said determining step.

29. A method according to claim 28, wherein said amplifying is performed by PCR.

30. A method according to claim 24, wherein said determining is performed by a hybridization assay.

31. A method according to claim 24, wherein said determining is performed by a sequencing assay.

32. A method according to claim 24, wherein said determining is performed by a microsequencing assay.

33. A method according to claim 24, wherein said determining is performed by an enzyme-based mismatch detection assay.

34. A method according to any one of claims 24 to 33 wherein said *TBC-1*-related biallelic marker is selected from the group consisting of the biallelic markers in positions 9494 of the SEQ ID No. 1, and 1443, 5247, 6223, 14723, 19186, 18997, 19891, 29617, 42519, 69324, 69181, 69146, 76458, 78595, 82159, 84522, 84810, and 89967 of the SEQ ID No. 2.

35. An isolated, purified, or recombinant polypeptide comprising a continuous span of at least 8 amino acids of SEQ ID No 5.

36. An isolated or purified antibody composition capable of selectively binding to an epitope-containing fragment of a polypeptide according to claim 35.